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Jawaharlal Nehru

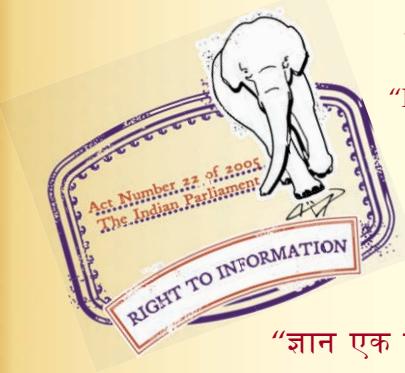
“Step Out From the Old to the New”

IS 5406 (1979): Urea, Fertilizer Grade [FAD 7: Soil Quality and Gertilizers]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaranay Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”





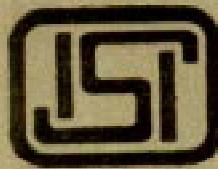
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*Indian Standard*  
SPECIFICATION FOR  
UREA, FERTILIZER GRADE  
(First Revision)

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INDIAN STANDARDS INSTITUTION  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

*Indian Standard*  
**SPECIFICATION FOR**  
**UREA, FERTILIZER GRADE**  
*(First Revision)*

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(Continued on page 2)

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**AMENDMENT NO. 1 MAY 2012  
TO  
IS 5406 : 1979 SPECIFICATION FOR  
UREA, FERTILIZER GRADE**

*( First Revision )*

[Page 4, clause 3.2(d)] — Substitute ‘Gross and net quantity in kg.’ for  
‘Gross and net mass in kg.’

(FAD 7)

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Reprography Unit, BIS, New Delhi, India

*Indian Standard*

**SPECIFICATION FOR**

**UREA, FERTILIZER GRADE**

*( First Revision )*

**0. FOREWORD**

**0.1** This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 26 April 1979, after the draft finalized by the Fertilizers Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

**0.2** This standard was published in 1969. This revision had been undertaken to consider limit of biuret content. With increase in the use of urea as fertilizer in the country, its use as a foliar spray for plants has also increased. The Sectional Committee responsible for the preparation of this standard has given careful consideration to this aspect and found that no conclusive data is available to fix the critical biuret limits for individual crops for foliar spray application of the fertilizer. Further, separate standards on methods of sampling and test for fertilizers have been published, those details have therefore been deleted from this standard.

**0.3** In the preparation of this standard, consideration has been given to the need for maintaining co-ordination with the specifications of the Fertilizer (Control) Order, 1957 and the Essential Commodities Act, 1955 of Government of India. However, this standard is subject to the provisions imposed under this Order wherever applicable.

**0.4** For particle size, the use of IS sieve conforming to IS:460-1962\* is prescribed. Where IS sieves are not available, other standard sieves as judged from aperture size may be used.

**0.5** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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\*Specification for test sieves (revised).

†Rules for rounding off numerical values (revised).

## 1. SCOPE

**1.1** This standard prescribes the requirements and the methods of sampling and test for urea, fertilizer grade.

## 2. REQUIREMENTS

**2.1 Description** — The material shall be in the form of prills, pellets or shots. It shall be free from visible impurities and from dust.

**2.2 Particle Size of Prilled Urea** — The portion of the material passing through 2.8-mm IS Sieve and retained on 1-mm IS Sieve shall not be less than 90 percent by mass.

**2.3** The material shall also comply with the requirements given in Table 1.

**TABLE 1 REQUIREMENTS FOR UREA, FERTILIZER GRADE**

( *Clauses 2.3 and 5.1* )

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Total nitrogen, percent by mass, <i>Min</i>	46.0	8 of IS:6092 (Part II)-1971*
ii)	Moisture, percent by mass, <i>Max</i>	1.0	5.1 of IS:6092 (Part VI)-1971†
iii)	Biuret, percent by mass, <i>Max</i>	1.5	6 of IS:6092 (Part VI)-1971†

\*Methods of sampling and test for fertilizers: Part II Determination of nitrogen.

†Methods of sampling and test for fertilizers: Part VI Determination of impurities.

## 3. PACKING AND MARKING

**3.1 Packing** — The material shall be packed in moisture proof 50-kg bags or as agreed to between the purchaser and the supplier. Each bag shall be securely closed.

**3.2 Marking** — Each bag shall bear legibly and indelibly following information:

- Name of the fertilizer;
- Name of the manufacturer and his recognized trade-mark, if any;
- Percentage of total nitrogen by mass; and
- Gross and net mass in kg.

### **3.2.1 The bags may also be marked with the ISI Certification Mark.**

**NOTE**— The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

## **4. SAMPLING**

**4.1 Representative samples of the material shall be drawn as prescribed in IS:6092 (Part I)-1971\*.**

**4.2 Number of Tests** — Tests for all the requirements given in **2** shall be conducted on the composite test sample.

**4.3 Criteria for Conformity** — For declaring the conformity of the lot to the requirements of this specification, the test results on the composite test sample shall satisfy all the requirements specified in **2**.

## **5. TEST METHODS**

**5.1** Tests for the requirements listed under **2** shall be carried out according to methods prescribed in IS:6092 (Part II)-1971† and IS:6092 (Part VI)-1971‡. Reference to relevant parts and clauses is given in col 4 of Table 1.

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\*Methods of sampling and test for fertilizers: Part I Sampling.

†Methods of sampling and test for fertilizers: Part II Determination of nitrogen.

‡Methods of sampling and test for fertilizers: Part VI Determination of impurities.

(Continued from page 2)

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# INDIAN STANDARDS

ON

## FERTILIZERS

IS:

294-1979 Superphosphate (*second revision*)  
 826-1967 Ammonium sulphate, fertilizer grade  
 853-1964 Bone-meal, raw (*revised*)  
 1013-1972 Triple superphosphate (*first revision*)  
 1014-1956 Bone-meal, steamed  
 1114-1964 Ammonium chloride fertilizer grade (*revised*)  
 1304-1963 Glossary of terms used in fertilizer trade and industry (*revised*)  
 1781-1975 Urea, technical (*first revision*)  
 2256-1972 Ammonium sulphate nitrate (*first revision*)  
 2409-1971 Calcium ammonium nitrate (*first revision*)  
 2764-1964 Potassium sulphate, fertilizer grade  
 2779-1964 Potassium chloride (*muriate of potash*), fertilizer grade  
 3029-1964 Castorseed cake for fertilizer purposes  
 4830-1969 Ammonium phosphate sulphate, granular (*first revision*)  
 5406-1979 Urea, fertilizer grade  
 5985-1971 Code of practice for handling and storage of bagged fertilizers  
 6092-1971 Methods of sampling and test for fertilizers  
 6092 (Part I)-1971 Sampling  
 6092 (Part II)-1971 Determination of nitrogen  
 6092 (Part III)-1971 Determination of phosphorus  
 6092 (Part IV)-1971 Determination of potassium  
 6092 (Part V)-1971 Determination of trace elements  
 6092 (Part VI)-1971 Determination of impurities  
 6448-1971 Diammonium phosphate  
 6661-1972 Potassium schoenite  
 7131-1973 Nitrophosphate based granulated fertilizers  
 7863-1975 Fertilizer physical mixtures  
 8249-1976 Zinc sulphate, agricultural grade  
 8359-1977 Urea ammonium phosphate based fertilizers  
 8558-1977 NEEM cake for manuring  
 8559-1977 MAHUA cake for manuring

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